

INTERNATIONAL SEARCH REPORT

International Application No
PCT/2004/050976A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B21D53/64 B26B21/56 B26B21/22

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B21D B26B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 010 646 A (NEAMTU NICOLAE) 30 April 1991 (1991-04-30) cited in the application column 1, line 51 -column 3, line 34; figures 3,4 ---	1
A	US 4 302 876 A (EMMETT JAMES S) 1 December 1981 (1981-12-01) cited in the application column 6, line 28-33; figures 7,8 ---	1
A	US 3 431 624 A (PICKEL JAMES BRENNAN) 11 March 1969 (1969-03-11) column 2, line 65 -column 3, line 9; figure 1 ---	7,10 -/-

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search 16 September 2004	Date of mailing of the International search report 05/10/2004
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Rattenberger, B

INTERNATIONAL SEARCH REPORT

International Application No
PCT/2004/050976

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B21D53/64 B26B21/56 B26B21/22

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B21D B26B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 010 646 A (NEAMTU NICOLAE) 30 April 1991 (1991-04-30) cited in the application column 1, line 51 -column 3, line 34; figures 3,4 ----	1
A	US 4 302 876 A (EMMETT JAMES S) 1 December 1981 (1981-12-01) cited in the application column 6, line 28-33; figures 7,8 ----	1
A	US 3 431 624 A (PICKEL JAMES BRENNAN) 11 March 1969 (1969-03-11) column 2, line 65 -column 3, line 9; figure 1 ----	7,10 -/-

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the International filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the International filing date but later than the priority date claimed

- *T* later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the Invention
- *X* document of particular relevance; the claimed Invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed Invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the International search report
16 September 2004	05/10/2004
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Rattenberger, B

INTERNATIONAL SEARCH REPORT

International Application No

PCT/ --2004/050976

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 1 672 516 A (DREW JOHN E) 5 June 1928 (1928-06-05) page 1, line 88 -page 2, line 6; figure 2 -----	7,10

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP2004/050976

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
US 5010646	A	30-04-1991	AT BR CA CN DE DE DK EP ES GR JP JP KR TR WO	120999 T 9104187 A 2047171 A1 1055690 A ,B 69108799 D1 69108799 T2 465634 T3 0465634 A1 2071300 T3 3015775 T3 4506470 T 3214853 B2 157603 B1 25511 A 9111300 A1		15-04-1995 03-03-1992 27-07-1991 30-10-1991 18-05-1995 23-11-1995 08-05-1995 15-01-1992 16-06-1995 31-07-1995 12-11-1992 02-10-2001 15-10-1998 01-05-1993 08-08-1991
US 4302876	A	01-12-1981		NONE		
US 3431624	A	11-03-1969	CH DE ES ES FR GB NL SU	465246 A 1648495 A1 346017 A1 360960 A1 1541835 A 1161724 A 6713980 A 361596 A3		15-11-1968 13-04-1972 16-03-1969 01-08-1970 11-10-1968 20-08-1969 16-04-1968 07-12-1972
US 1672516	A	05-06-1928		NONE		